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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 46320
	:	
Frank LEYMANN, et al.	:	Confirmation Number: 5078
	:	
Application No.: 10/042,799	:	Group Art Unit: 2157
	:	
Filed: January 9, 2002	:	Examiner: A. Gold
	:	
For: MANAGING A FAILURE TO ACCESS A DATABASE IN A COMPUTER SYSTEM	:	

SUPPLEMENTAL APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Supplemental Appeal Brief is submitted, pursuant to 37 C.F.R. § 41.39(b)(2), in support of the Notice of Appeal filed May 15, 2006, and in response to the Pre-Appeal Brief Conference decision dated June 7, 2006, and in response to the Examiner reopening prosecution in the Office Action dated November 16, 2006, wherein Appellants appeal from the Examiner's rejection of claims 1-14.

I. REAL PARTY IN INTEREST

This application is assigned to IBM Corporation by assignment recorded on January 9, 2002, at Reel 012497, Frame 0053.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals and interferences.

III. STATUS OF CLAIMS

Claims 1-14 are pending in this Application and have been four-times rejected. It is from the multiple rejections of claims 1-14 that this Appeal is taken.

IV. STATUS OF AMENDMENTS

The claims have not been amended subsequent to the imposition of the Fourth Office Action dated November 16, 2006 (hereinafter Fourth Office Action).

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claims 1, 7, and 11 are respectively directed to a method, system, and method for managing a failure to access a database in a computer system. Referring to Figure 1 and generally to pages 5 and 6 of Appellants' disclosure, a computer system includes at least one application client 14, 15, 16 (page 5, line 3 of Appellants' disclosure); at least two application servers 20, 21 that are suitable to process requests of the application clients 14, 15, 16 (page 5, lines 16-19); and a database 26 accessible by the two application servers 20, 21 (page 5, lines 20-21). During operation, a first application server 21 may be recognized as failing to access the database 26 (page 6, lines 8-10). Referring to Figure 2, when a request is sent from an application client 15 to the first application server 21 (i.e., the server that fails to access the database 26), the request is sent from the first application server 21 to the second application server 20 while the first application server 21 fails to access the database 26 (page 7, lines 9-18). The request is then processed by the second application server 20, and the response is sent from the second application server 20 to the first application server 21 (page 7, lines 19-25), which can send the response back to the requesting application client without the requesting application

client recognizing that the first application server 21 cannot access the database 26 (page 8, lines 1-9). Thus, the failure is transparent to the requesting application client.

Referring to independent claim 7, a computer system includes at least two application servers 20, 21 which are suitable to process requests of at least one application client 15 (page 5, lines 16-19) and a database 26 accessible by the application servers 20, 21 (page 5, lines 20-21). Independent claim 7 further recites "means for recognising that the first one of the two application servers (21) fails to access the database (26)," and this feature finds support on page 6, lines 8-16 and in features 20, 21, 22 shown in Fig. 1. Independent claim 7 also recites "means for sending a request of the application client (15) for the first application servers (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database," and this feature finds support on page 7, lines 9-18 and in feature 21 shown in Fig. 2. Independent claim 7 additionally recites "means for processing the request by the second application server (20)," which is disclosed by second application server 20 shown in Fig. 2 and described in page 7, line 19 through page 8, line 9. Independent claim 7 still further recites "means for sending a response to the request from the second application server (20) to the first application server (21)," which also disclosed by second application server 20 shown in Fig. 2 and described in page 7, line 19 through page 8, line 9.

Referring to Figure 2 and independent claim 11, a method of operating a computer system includes the step of detecting that a first of the application servers fails to access the database (page 7, lines 1-3). A request is received by a first application server from the application client to the first application server (30; page 7, lines 9-11). The request is received by a second of the application servers from the first application server while the first application

server fails to access the database (32; page 7, lines 14-18), and the request is processed by the second application server to generate a response (33; page 7, lines 19-22). The response from the second application server is received by the first application server (34, page 7, line 23 through page 8, line 1), and the response is forwarded to the application client by the first application server (37; page 8, lines 6-9).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-14 were rejected under 35 U.S.C. § 103 for obviousness based upon Holmberg et al., U.S. Patent No. 6,247,141 (hereinafter Holmberg), in view of Rizvi et al., U.S. Patent No. 6,490,610 (hereinafter Rizvi), and Helmer et al., U.S. Patent No. 6,411,911 (hereinafter Helmer).

VII. ARGUMENT

THE REJECTION OF CLAIMS 1-14 UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON HOLMBERG IN VIEW OF RIZVI AND HELMER

For convenience of the Honorable Board in addressing the rejections, claims 2-6 stand or fall together with independent claim 1, claims 8 and 9 stand or fall together with independent claim 7, and claims 12-14 stand or fall together with independent claim 11.

Claim 1

In the Amendment filed November 4, 2005, Appellants amended independent claims 1 and 7 to clarify that the step of sending a request from a first application server to a second application server occurs while the first application server fails to access a database. Appellants also argued that this feature is neither taught nor suggested by Holmberg and Rizvi, either alone

or in combination. Additionally, Appellants presented arguments on pages 6-8 of the Amendment, which conclude that "even if Holmberg were modified in view of Rizvi, the claimed invention would not result" (emphasis in original). After repeating these arguments in the Appeal Brief filed August 14, 2006, the Examiner reopened prosecution to add the tertiary reference of Helmer.

Independent claim 1 recites, in part, the following limitations:

 sending a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database.

In comparing the Examiner's statement of the rejection in the Third Office Action dated February 13, 2006, (hereinafter Third Office Action) to the Examiner's statement of the rejection of the Fourth Office Action, Appellants note the following difference. In the Third Office Action, the Examiner asserted that Holmberg teaches "sending a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20)" (emphasis added), whereas in the Fourth Office Action, the Examiner asserted that Holmberg teaches "sending a request of the application client (15) for the first application server (21) to the second application server (20)." Thus, the Examiner recognizes that the request is not sent *from the first application server* to the second application while the first application server fails to access the database.

In the last full paragraph on page 4 of the Office Action, the Examiner asserted the following:

Holmberg and Rizvi fail to teach the limitation further including sending a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20).

Appellants respectfully submit that the Examiner has failed to consider the claimed invention, as a whole,¹ when characterizing the differences between claimed invention and the prior art as part of the factual inquiries required by Graham v. John Deere Co.² In particular, the Examiner has improperly separated the "while the first application fails to access the database" limitation from the limitation of sending a request of the application client for the first application server to the second application server.

Not only has the Examiner failed to properly characterize the differences between the claimed invention and the teachings of Holmberg and Rizvi, the Examiner also failed to properly characterize the teachings of the Helmer. In the first full paragraph on page 4 of the Fourth Office Action, the Examiner asserted the following:

However, Helmer teaches a geographic data replication system and method for a network (see abstract). Helmer teaches the use of a failed server routing requests to a remote server for processing (col. 2, lines 2-15, 46-59). (emphasis added)

For ease of reference both column 2, lines 2-15 and 46-59 of Helmer are reproduced below:

The present invention is directed to a geographic data replication system and method. According to one feature of the invention, temporary data for a local server is replicated periodically to a remote server. According to a second feature, the temporary data for the remote

¹When applying 35 U.S.C. § 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- (D) Reasonable expectation of success is the standard with which obviousness is determined.

Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

² 383 U.S. 1, 148 USPQ 459 (1966).

server is replicated to the local server. Replication includes copying temporary data to file servers associated with the local and remote servers. Advantageously, an architecture according to the present invention allows for about 100% service availability. If a server fails, such as the local server, the remote server begins processing user requests based on the temporary data it received from the local server. Failure of a server may not result in failure of services or loss of previously generated temporary data. (column 2, lines 2-15)

Referring to FIGS. 1-3, embodiments of a system and associated methods for replicating temporary data are shown. The temporary data associated with at least two geographically remote servers is replicated between the servers. If a server generates temporary data associated with a user, such as identifying selected shopping items, the temporary data is replicated to a remote server. If the local server fails, the user request is routed to the remote server. The remote server processes the request with the benefit of the previously generated temporary data. Temporary data, such as data identifying the selected shopping items, is applied by the remote server without repetitive user input or processing. Therefore, about 100% service availability is provided. (column 2, lines 46-59)

Despite the Examiner asserting that Helmer teaches that a *failed* server routes requests to a remote server, upon reviewing both the above-cited passages and the remaining passages within Helmer, Appellants are unable to determine specifically where this teaching is found with Helmer. Thus, the Examiner has failed to properly characterize the teachings of Helmer.

Besides failing to properly characterizing the differences between the claimed invention and the teaching of Holmberg and Rizvi as well as failing to properly characterize the teachings of Helmer, the Examiner has failed to establish a proper motivation to modify the combination of Holmberg and Rizvi in view of Helmer. The Examiner's asserted motivation to combine is found in the second full paragraph on page 4 of the Fourth Office Action and reproduced below:

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Holmberg and Rizvi in view of Helmer to send a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20). One would be motivated to do so because it would be a faster and more efficient backup for the server to forward the data to the backup server.

At the outset, Appellants note that the Examiner has failed to establish a realistic nexus between the proposed modification and the asserted benefit. The Examiner's proposed modification is to "send a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20)," yet Appellants are unclear as to

how sending the request from first server to a second server "would be a faster and more efficient backup for the server," which is the asserted benefit since the request is not providing any "backup" for the first server.

Moreover, both Holmberg and Rizvi provide backup servers, yet the Examiner's assertion that the solution of Helmer would "be a faster and more efficient backup" is completely factually unsupported. The Examiner has provided no comparison between the respective backup systems of Holmberg, Rizvi, and Helmer. As such, Appellants question how one having ordinary skill in the art would recognize that the system of Helmer would be faster and more efficient.

Therefore, for all the reasons stated above, Appellants respectfully submit that one having ordinary skill in the art would not have arrived at the claimed invention based upon the combination of Holmberg in view of Rizvi and Helmer.

Claims 7 and 11

Appellants further note that independent claims 7 and 11 contain similar limitations to those limitations recited in independent claim 1. For example, claim 7 also recites "sending a request of the application client (15) for the first application servers (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database," which is comparable to the limitation found in claim 1, which Appellants have argued is not taught or suggested by the combination of Holmberg in view of Rizvi and Helmer. Claim 11, similarly, recites "receiving, by a second of the application servers, the request from the first application server while the first application

server fails to access the database." Thus, independent claims 7 and 11 are also not taught or suggested by the combination of Holmberg in view of Rizvi and Helmer for the same reasons previously presented with regard to claim 1.

Notwithstanding that the combination of Holmberg in view of Rizvi and Helmer fails to teach or suggest the limitations recited in independent claims 7 and 11 that are comparable to the limitations recited in claim 1, independent claims 7 and 11 are not identical to independent claim 1. Whereas claim 1 is directed to a method, claim 7 is directed to a computer system, and the methods recited in claims 1 and 11 are substantially different. The Examiner, however, has not recognized these differences in the statement of the rejection since the Examiner's comments in the statement of the rejection only refer to the limitations recited in claim 1. Thus, the Examiner has failed to establish a prima facie case of obviousness in rejecting claims 7 and 11 since the Examiner has failed to establish that the combination of Holmberg in view of Rizvi and Helmer teaches or suggests all of the claimed limitations.

Appellants note that the argument immediately above was also made in the first Appeal Brief. However, the Examiner's statement of the rejection in Fourth Office Action never addressed this argument.

Conclusion

Based upon the foregoing, Appellants respectfully submit that the Examiner's rejections under 35 U.S.C. § 103 for obviousness based upon the applied prior art is not viable. Appellants,

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therefore, respectfully solicit the Honorable Board to reverse the Examiner's rejections under 35 U.S.C. § 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due under 37 C.F.R. §§ 1.17, 41.20, and in connection with the filing of this paper, including extension of time fees, to Deposit Account 09-0461, and please credit any excess fees to such deposit account.

Date: November 22, 2006

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1. Method of operating a computer system, wherein said computer system comprises at least one application client (15), at least two application servers (20, 21) which are suitable to process requests of the application clients (15), and a database (26) accessible by the two application servers (20, 21), and wherein said method comprises the steps of:

recognising that the first one of the two application servers (20, 21) fails to access the database (26),

sending a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database,

processing the request by the second application server (20), and

sending a response to the request from the second application server (20) to the first application server (21).

2. Method of claim 1 comprising the further step of sending the response from the second application server (20) to an input queue (24) of the first application server (21).

3. Method of claim 2 comprising the further step of putting, by the first application server (21), the response from the input queue (24) to an output queue (27) of the first application server (21).

4. Method of claim 1 comprising the further step of sending the response from the second application server (20) to an output queue (27) of the first application server (21).

5. Method of one of claims 3 or 4 comprising the further step of sending the response from the output queue (27) to the application client (15).

6. Computer program or computer program product which is suitable to perform the method of one of claims 1 to 4 when it is loaded into a computer system.

7. Computer system comprising
at least two application servers (20, 21) which are suitable to process requests of at least one application client (15),

a database (26) accessible by the application servers (20, 21),

means for recognising that the first one of the two application servers (21) fails to access the database (26),

means for sending a request of the application client (15) for the first application servers (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database,

means for processing the request by the second application server (20), and

means for sending a response to the request from the second application server (20) to the first application server (21).

8. Computer system of claim 7 further comprising an input queue (24) corresponding to the first application server (21).

9. Computer system of claim 7 or 8 further comprising an output queue (27) corresponding to the first application server (21).

10. Computer system of one of claims 7 to 8 wherein the at least two application servers (20, 21) process requests from a number of application clients (14, 15, 16).

11. A method of operating a computer system, wherein the computer system comprises an application client, application servers configured to process requests of the application client, and a database accessible by the application servers, and wherein the method comprises the steps of:

detecting that a first of the application servers fails to access the database;

receiving, by the first application server, a request from the application client to the first application server;

receiving, by a second of the application servers, the request from the first application server while the first application server fails to access the database;

processing, by the second application server, the request to generate a response;

receiving, by the first application server, the response from the second application server;

and

forwarding, by the first application server, the response to the application client.

12. The method of claim 11, further comprising the step of receiving, from the second application server, the response into an input queue of the first application server.

13. The method of claim 12, further comprising the step of transferring the response from the input queue of the first application server to an output queue of the first application server.

14. The method of claim 11, further comprising the step of receiving, from the second application server, the response into an output queue of the first application server.

IX. EVIDENCE APPENDIX

No evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 of this title or of any other evidence entered by the Examiner has been relied upon by Appellants in this Appeal, and thus no evidence is attached hereto.

X. RELATED PROCEEDINGS APPENDIX

Since Appellants are unaware of any related appeals and interferences, no decision rendered by a court or the Board is attached hereto.